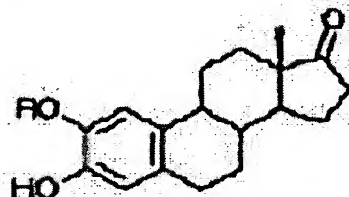


We claim:

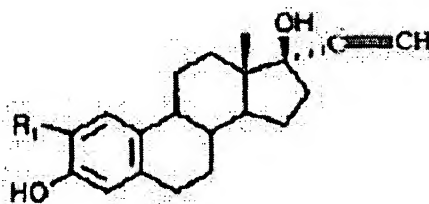
1. A method for producing therapeutic compounds comprising the steps of:  
using as a substrate a first chemical composition represented by the following  
structure:



wherein R is selected from a group consisting of  $\text{CH}_3$ ,  $\text{CH}_2\text{CH}_3$ , and  $\text{CH}_2\text{C}_6\text{H}_5$ ;

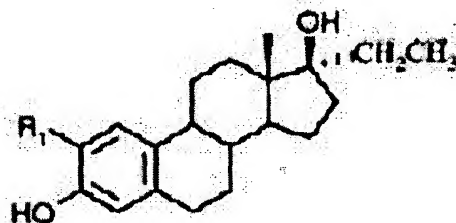
10 and

through a substitution reaction, producing from said first chemical composition a  
second chemical composition represented by the following structural formula:



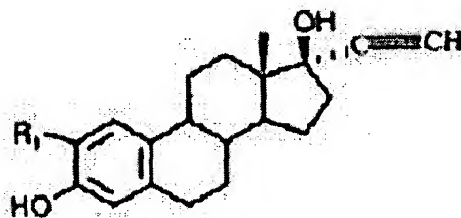
wherein  $\text{R}_1$  is selected from a group consisting of  $\text{OCH}_3$ ,  $\text{OCH}_2\text{CH}_3$ ,  
 $\text{OCH}_2\text{C}_6\text{H}_5$  AND  $\text{CH}_2\text{CH}_3$

2. The method of Claim 1 further comprising the step of producing from said second chemical composition a third chemical composition represented by the following structural formula:



wherein R<sub>1</sub> is selected from a group consisting of OCH<sub>3</sub>, OCH<sub>2</sub>CH<sub>3</sub>,  
10 OCH<sub>2</sub>C<sub>6</sub>H<sub>5</sub> AND CH<sub>2</sub>CH<sub>3</sub>.

3. A method of inducing apoptosis in cancerous tissues which are characterized as reactive to therapeutic doses of 2-Methoxyestradiol, comprising, in lieu of, or in combination with administering such doses of 2-Methoxyestradiol, the steps of:  
15 selecting a chemical composition represented by the following structural formula:

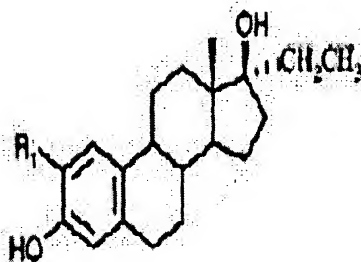


wherein R<sub>1</sub> is selected from a group consisting of OCH<sub>3</sub>, OCH<sub>2</sub>CH<sub>3</sub>,  
OCH<sub>2</sub>C<sub>6</sub>H<sub>5</sub> AND CH<sub>2</sub>CH<sub>3</sub>, and

administering a therapeutic dose of said chemical composition to said cancerous cells.

4. A method of inducing apoptosis in cancerous tissues which are characterized as reactive to therapeutic doses of 2-Methoxyestradiol, comprising, in lieu of, or in combination with administering such doses of 2-Methoxyestradiol, the steps of:
- 5 selecting a chemical composition represented by the following structural formula:

10

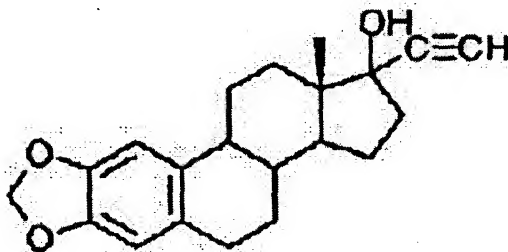


wherein R<sub>1</sub> is selected from a group consisting of OCH<sub>3</sub>, OCH<sub>2</sub>CH<sub>3</sub>,  
OCH<sub>2</sub>C<sub>6</sub>H<sub>5</sub> AND CH<sub>2</sub>CH<sub>3</sub>, and

- 15 administering a therapeutic dose of said first chemical composition to said cancerous cells.

5. A method of inducing apoptosis in cancerous tissues which are characterized as reactive to therapeutic doses of 2-Methoxyestradiol, comprising, in lieu of, or in combination with administering such doses of 2-Methoxyestradiol, the steps of:  
selecting a chemical composition represented by the following structural formula:

5



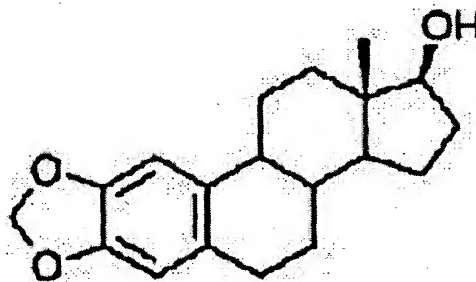
10

and

administering a therapeutic dose of said chemical composition to said cancerous cells.

6. A method of inducing apoptosis in cancerous tissues which are characterized as reactive to therapeutic doses of 2-Methoxyestradiol, comprising, in lieu of, or in combination with administering such doses of 2-Methoxyestradiol, the steps of:  
selecting a chemical composition represented by the following structural formula:

5 selecting a chemical composition represented by the following structural formula:

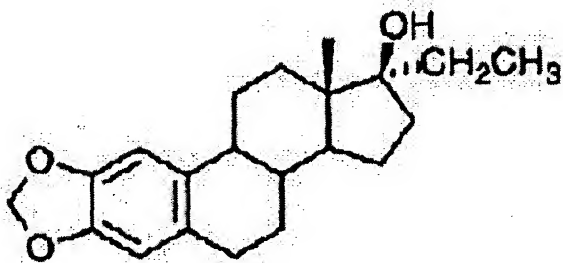


and

administering a therapeutic dose of said chemical composition to said cancerous cells.

7. A method of inducing apoptosis in cancerous tissues which are characterized as reactive to therapeutic doses of 2-Methoxyestradiol, comprising, in lieu of, or in combination with administering such doses of 2-Methoxyestradiol, the steps of: selecting a chemical composition represented by the following structural formula:

5



10

and

administering a therapeutic dose of said chemical composition to said cancerous cells.

15

20